

REMARKS

Claim Rejections

Claims 1 and 2 — 35 U.S.C. § 112

Claims 1 and 2 have been rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Applicant submits that amendments to claims 1 and 2 overcome the rejection and respectfully request that this rejection be withdrawn.

Claims 1 and 3-5 — 35 U.S.C. § 103(a)

Claims 1 and 3-5 have been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Pat. Pub. No. 2003/0094875 to Sakuma *et al.* ("Sakuma") in view of U.S. Pat. No. 6,211,593 to Nishiki ("Nishiki") and further in view of U.S. Pat. Pub. No. 2003/0001450 to Kazmierczak ("Kazmierczak"). Applicant has amended claim 1 and submits that the amended claim would not have been rendered obvious by the cited references.

Addressing claim 1, the combination of Sakuma, Nishiki and Kazmierczak does not disclose or suggest at least one width reducing portion which renders a width of a magnetic path of the back yoke portion of the stator reduced relative to a width of a magnetic path of the back yoke portion corresponding to the other teeth such that the magnetic path having the width reducing portion provided therein avoids a location of highest magnetic flux concentration, as recited in the claim.

Sakuma discloses a synchronous reluctance motor comprising a rotor 15 and a stator 11 having a plurality of teeth formed in an inner face thereof along a peripheral direction and in opposition to the rotor 15. Sakuma's motor has six teeth which are in opposition to one of a plurality of rotor magnetic poles. Nishiki discloses a motor driven in a three-phase mode and a stator having windings with a coil pitch corresponding to five of six teeth. The Examiner relies

on Kazmierczak to allegedly disclose a tooth which is located between an adjacent pair of stator windings which form magnetic poles in a same phase and with different polarities in a three-phase drive mode, and a back yoke portion of the stator.

However, the techniques disclosed by the cited references, alone or in combination, result in the width reducing portion sometimes being provided in a position where magnetic flux concentration is highest. On the other hand, as claimed by Applicant, the width reducing portion deliberately avoids the position where highest magnetic flux concentration is present.

Thus, Applicant's claimed configuration prevents reduction of the coil interlinkage flux by the width reducing portion when the rotor and stator are in the relative position where the linked magnetic flux is highest. Applicant's claimed configuration thereby produces the advantageous result of increasing the difference between the maximum value in the minimum value of the coil interlinkage flux to increase reluctance torque.

In view of the above, one of ordinary skill in the art at the time the invention was made would not have been motivated to combine the references as attempted by the Examiner since the combined references fail to disclose or suggest Applicant's claimed configuration or the advantageous results achieved thereby.

Accordingly, claim 1 is patentable over the combination of Sakuma, Nishiki and Kazmierczak. Claims 3 and 4 which depend from claim 1 and are patentable at least by virtue of their dependence.

Claim 5 depends from claim 2 and is patentable over the prior art at least by virtue of its dependence from claim 2 which is patentable as explained in the arguments below.

Claim 1 — 35 U.S.C. § 103(a)

Claim 1 has been alternatively rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Sakuma in view of Nishiki and further in view of U.S. Pat. Pub. No. 2002/0093266 to Buening *et al.* ("Buening"). Applicant has amended claim 1 and submits that the amended claim would not have been rendered obvious by the cited references.

The combination of Sakuma, Nishiki and Buening does not disclose or suggest at least one width reducing portion which renders a width of a magnetic path of the back yoke portion of the stator reduced relative to a width of a magnetic path of the back yoke portion corresponding to the other teeth such that the magnetic path having the width reducing portion provided therein avoids a location of highest magnetic flux concentration, as recited in the claim.

As noted in the arguments for claim 1 above, the combination of Sakuma and Nishiki fails to disclose or suggest at least these features. The Examiner relies on Buening to provide essentially the same disclosure as Kazmierczak. Therefore, for reasons similar to the reasons set forth in the arguments for claim 1 above, claim 1 is also patentable over the combination of Sakuma, Nishiki and Buening.

Claim 2 — 35 U.S.C. § 103(a)

Claim 2 has been rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Sakuma, Nishiki and Kazmierczak, and further in view of U.S. Patent No. 6,081,087 to Iijima *et al.* ("Iijima"). Applicant has amended claim 2 and submits that the amended claim would not have been rendered obvious by the cited references.

The combination of Sakuma, Nishiki, Kazmierczak and Iijima does not disclose or suggest at least one width reducing portion which renders a width of a magnetic path of the back yoke portion of the stator reduced relative to a width of a magnetic path of the back yoke portion

corresponding to the other teeth such that the magnetic path having the width reducing portion provided therein avoids a location of highest magnetic flux concentration, as recited in claim 2. As noted above, the combination of Sakuma, Nishiki and Kazmierczak fails to disclose or suggest all the claimed limitations. Iijima does not cure the deficiencies of the Sakuma-Nishiki-Kazmierczak combination. The Examiner relies on Iijima to allegedly disclose a two-phase-on rectangle wave drive mode. However, even if Iijima provides such disclosure, the combined references fail to disclose or suggest all the claimed features.

Accordingly, in view of the arguments set forth above for claim 1, claim 2 is patentable over the combination of Sakuma, Nishiki, Kazmierczak and Iijima.

Claim 2 — 35 U.S.C. § 103(a)

Claim 2 has been alternatively rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Sakuma in view of Nishiki and further in view of Buening and Iijima. Applicant has amended claim 2 and submits that the amended claim would not have been rendered obvious by the cited references.

Since claim 2 contains features similar to the features recited in claim 1, Applicant respectfully submits that claim 2 is patentable over the combination of Sakuma, Nishiki, Buening and Iijima for at least the reasons set forth above in the arguments for claim 1 as well as the arguments for claim 2 set forth above.

New Claims

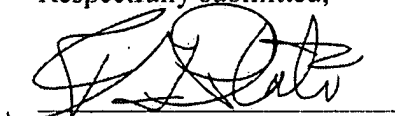
Applicant has added new claims 6-8 depend from claim 2. The new claims are supported through of the specification drawings at least, for example, at pages 14-15. Applicant submits that no matter has been added. New dependent claims 6-8 are patentable at least by virtue of their dependence from claim 2.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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